United States General Accounting Office

GAO

Briefing Report to the Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives

September 1986

AIRCREW TRAINING

Tactical Air Command and Strategic Air Command Flying Hour Programs

GAO/NSIAD-86-192BR

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United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-223083

September 30, 1986

The Honorable Bill Chappell, Jr.
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

Earlier this year, we briefed your office on the results of our review of the Tactical Air Command (TAC) and Strategic Air Command (SAC) flying hour programs. As requested at that time, we are providing this briefing report on the results of our review.

TAC and SAC establish continuation training requirements for the flying hours needed to bring pilots and other crewmembers to a fully combat-ready status--capable of performing the wartime mission for which the unit is organized, designed, or tasked. Additional flying hours are to enhance performance and provide proficiency in secondary missions. The Department of Defense (DOD) says this additional flying is necessary to achieve full combat capability. In looking at these flying hour programs, we observed that:

--TAC and SAC criteria for determining when a pilot or crew is fully combat ready and how many added flying hours are needed to further enhance pilot and crew proficiency are largely based on the judgment of experienced pilots. The Air Force does not have a system for aggregating and analyzing objective data used as the basis for their professional judgments.

--Most TAC fighter pilots and SAC aircrews were flying well above the number of sorties/hours the Air Force requires for qualifying as fully combat ready, but below the number of sorties/hours the Air Force believes is needed to achieve full combat capability. DOD defines a unit fully combat ready when it is capable of performing the wartime mission for which it is organized, designed or tasked. DOD, in its

response to this report, said that to achieve full combat capability for all assigned missions, additional training is required for two purposes--enhanced performance and proficiency in specialized taskings and assigned secondary missions.

--Annual flying hour program budget requests prepared by TAC headquarters are based on aircraft utilization rates rather than a compilation of flying hours needed to meet training requirements and requests prepared by SAC headquarters are based on standards that differ from how flying hours are used by the operating units.

Military judgments will always play a significant role in determining combat readiness and pilot proficiency. However, we believe that objective data should be used, to the extent feasible, to support and substantiate military judgment and this data should be made available to the Congress in exercising its oversight responsibilities.

Benefits most likely accrue from each additional hour that a pilot flies. However, we believe analysis of trade-offs among the factors that impact pilot proficiency should be linked, to the extent possible, to objective data. For example, some TAC ranges have the capability to score air-to-ground gunnery and bombing qualification runs while another range is equipped to score air-to-air encounters. We believe that if the Air Force could develop a system to array and analyze this type of quantifiable data it would be useful in evaluating the impact of changes in flying hours, equipment, and tactics on pilot proficiency.

The high cost for a flying hour dictates that greater emphasis be placed on developing better measures for the benefits derived from different levels of flying hours. The approximate cost per hour in fiscal year 1985 to fly tactical operational fighters ranged from $1,600 for an A-10 to $8,300 for an F-111, with the F-15 in the mid-range at around $5,000. The cost per hour for SAC to fly its B-52s was $8,000 to $9,000, depending on the model. In fiscal year 1985, the TAC operational units flew about 282,800 hours, at a cost of about $966 million and the SAC B-52 aircrews flew about 103,400 hours, at a cost of about $897 million.

We provided a draft of this report to DOD for its review and comment. DOD disagreed with the report because of what it said was an underlying implication that the Air Force flies more hours than needed to be fully combat capable. We

have revised the report where possible to eliminate this implication. Appendix VI contains DOD's comments.

Most TAC fighter pilots and SAC aircrews are flying more than the number of sorties/hours needed to qualify them as fully combat ready, that is, capable of performing their wartime mission. However, it is not our intent to imply that the Air Force is flying more hours than are necessary. In fact, it is clear that the Air Force is not flying the number of hours it believes are required to achieve full combat capability.

Our primary concern is the need to provide objective data for improved management and oversight of the flying hour program. In its comments, DOD noted that aircrew training requirements are established based on the judgment of experts using objective data. However, this data is not accumulated and analyzed in the aggregate. We believe that, as the Congress and the Air Force assess flying hour programs, a management issue which should be addressed is the need and ability to develop and maintain a system for aggregating objective data, such as test range results so as to assess

--the benefits a pilot/aircrew receives from different levels of flying, and

--the relative benefits of additional flying hours versus other options, such as equipment mix and tactics which impact proficiency.

We are sending copies of this report to the Chairman, Subcommittee on Defense, Senate Committee on Appropriations; the Chairmen, Senate and House Committees on Armed Services; the Secretaries of Defense and the Air Force; the Director, Office of Management and Budget; and other interested parties.

Sincerely yours,

Frank C. Conahan

Frank C. Conahan
Assistant Comptroller General

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
GCC	Graduated Combat Capability
ICTS	integral crew training sorties
SAC	Strategic Air Command
TAC	Tactical Air Command
UNITREP	Unit Status and Identity Report

TACTICAL AIR COMMAND AND STRATEGIC AIR COMMAND FLYING HOUR PROGRAMS

The Department of Defense (DOD) defines military capability as the ability of a force to achieve a wartime objective (i.e., to win a battle or a war, destroy a target, etc.). Capability is composed of four components, or pillars--readiness, sustainability, force structure, and modernization. Although each of the pillars can be viewed separately, a change in one will often affect the others. For example, a change in force structure or modernization will affect readiness and sustainability.

This briefing report focuses on the Tactical Air Command (TAC) and the Strategic Air Command (SAC) flying hour programs and related pilot/crew readiness and total training requirements at the unit level. DOD measures readiness at the unit level by the Joint Chiefs of Staff's Unit Status and Identity Report (UNITREP) system. In UNITREP, a unit that receives the highest readiness rating, a C-1, is considered fully combat ready and trained to perform the wartime mission for which it is organized, designed, or tasked. (See app. II.)

An overall C-rating is assigned to each rated unit based on its lowest computed rating in any of the four resource areas--personnel, equipment and supplies on hand, equipment condition, and training. Flying hour requirements represent the hours crews must fly to complete training standards and attain a specific state of readiness. Minimum standards have been established in terms of flying hours per crew over a specific period of time, in order to maintain individual and unit-level technical and tactical proficiency.

READINESS/TRAINING REQUIREMENTS ARE SUBJECTIVE

TAC and SAC define continuation training requirements in terms of the number of sorties a pilot or aircrew must fly to qualify as fully combat ready and the number of additional sorties they need to achieve maximum proficiency. Readiness criteria and training requirements at TAC and SAC are largely based on judgment of experienced pilots. TAC and SAC do not have specific studies or empirical data to support either the number of sorties/flying hours required for a fully combat-ready status or the number of additional sorties/flying hours required for enhanced proficiency. In 1975, SAC did a limited test to determine whether B-52 crews could maintain combat readiness with a reduction in flying hours and an increase in simulator time. Early test results indicated that with a 30-percent

reduction in flying hours, the test crews' proficiency dropped. The test was discontinued.

TAC uses the Graduated Combat Capability (GCC) system to manage its continuation training program. The system specifies three levels of training determined primarily by the number of sorties a pilot flies every 6 months.

As defined in TAC Manual 51-50,

> "Level A is the basic, mission ready standard, as determined by the MAJCOM [major command] and contains the minimum training necessary for an aircrew to perform in the unit's primary missions.
>
> "Level B is the MAJCOM recommendation to most efficiently use the sorties available above that required for Level A. The training is necessary to increase proficiency, lower attrition, meet individual needs, accomplish specialized tactics not applicable to all crewmembers and increase unit capability to meet its full tasking.
>
> "Level C represents the complete program for the unit, based on tasked missions. It is the sum of all the sorties which should be programmed to complete training in all the tasks assigned against the unit, moderated by the unit's ability to effectively use additional resources."

According to TAC officials, the numbers of sorties required for levels A and C are based on the judgment of experienced pilots. The numbers vary among the different types of aircraft, but are generally the same for units flying the same type of aircraft. TAC training officers may adjust the number of sorties to meet particular unit needs or mission changes in a semiannual GCC tasking letter. The tasking letter specifies each unit's requirements and level A training events that the pilot must accomplish. TAC officials recently reviewed training to determine whether new capabilities are gained by flying more hours than are required by level A and found that the additional sorties are generally repetitions of level A flying. They concluded that additional capabilities gained are the exception, rather than the rule; however, they noted that the additional hours improved proficiency.

SAC manages its continuation training program and measures pilot/crew readiness and proficiency using integral crew training sorties (ICTS). For a sortie to qualify as an ICTS, specific events are to be completed, and only limited substitution of crewmembers is allowed. SAC requires each crew,

based on experience and proficiency, to complete either five, six, or seven of these sorties on a moving 3-month basis to be rated C-1. Each SAC aircrew must then fly three additional sorties, not necessarily ICTS, over a 3-month period to achieve its peacetime proficiency standard. As with TAC's requirements, these requirements are based on the judgment of experienced pilots.

FLYING LEVELS

A TAC unit can receive a C-1 rating, the highest under the UNITREP system, when it has at least 85 percent of its aircrews formed, mission (combat) ready, and available. Within TAC, pilots are considered mission ready when they fly at GCC level A. At the 1st Tactical Fighter Wing, this meant 56 sorties for experienced pilots and 62 sorties for inexperienced pilots over the last 6 months of 1985. Level B pilots were to fly between 72 and 83 sorties each 6-month period in 1985. Level C, TAC's training goal, required 103 to 116 sorties for experienced and inexperienced pilots, respectively, over the 6-month period. TAC believes that additional flying beyond level C becomes less important to pilot proficiency than other factors.

At the 1st Tactical Fighter Wing we obtained statistics on the amount of flying by pilots. Table I.1 compares the average number of sorties flown by the Wing's pilots during the first half of 1985 with the mission-ready standard. It shows that, on average, pilots were flying above GCC level A but below GCC level C, except for instructor pilots who were flying at GCC level C.

Table I.1: Sorties By 1st Tactical Fighter Wing Pilots-January to June 1985

		Sorties		
	Average number of pilots	Mission-ready standard	Average flown	Total Training Goal
Inexperienced	38	61	92	116
Experienced	27	53	87	103
Instructor	21	53	103	103

During our review, TAC officials were considering a change that would require a unit to have at least 80 percent of its pilots at a redefined level B in order to be rated C-1. At a recent training conference, TAC officials briefed Tactical Air Force representatives regarding the proposed change and received general agreement. Proposed wording for the revised GCC and

readiness standards has been approved by the TAC Assistant Deputy Chief of Staff for Operations, and TAC officials said the change could be tested during the July-December 1986 training cycle.

SAC manages its continuation training program and measures pilot/crew readiness and proficiency using ICTS. SAC's select (best), senior, and ready crews must fly five, six, or seven ICTS respectively, over a 3-month period. In fiscal year 1985, this required 57,502 flying hours for all B-52 crews to qualify as mission ready for SAC's nuclear mission. An additional 1,392 flying hours were required for its contingency mission. In establishing total proficiency requirements, SAC adds three additional sorties, not necessarily ICTS, for a total of 8, 9, and 10 sorties, respectively, over a 3-month period, for a total continuation training requirement of 84,646 flying hours. (See app. III.)

SAC's fiscal year 1985 allocation was 89,036 flying hours to meet the continuation training requirement plus requalification flying, pilot and navigator upgrade, and staff flying.

TAC and SAC officials say they cannot quantifiably measure the effect additional flying has on pilot/aircrew proficiency. However, they believe that pilot's proficiency increases as flying hours increase. Since 1980, the total flying hours for TAC's fighter wings increased about 70 percent, but because of increases in aircraft inventory, changes in pilot-to-aircraft ratios, and staff flying, the average flying time of line pilots only increased 13 percent. (See app. IV.)

TAC pilots are considered much more proficient today than they were in 1980, and indicators cited are a declining accident rate and better bombing scores. In addition to increased flying hours, other factors have contributed to increased pilot/aircrew proficiency since 1980. These include more rigorous and realistic combat training, newer and safer aircraft with improved capabilities, reduced maintenance requirements, and increased spares inventory. Data concerning the relative impact each factor has on pilot proficiency are not available. Thus, the Air Force cannot identify the most cost-effective mix of flying hours and these factors.

BUDGET PROCESS NOT TOTALLY REPRESENTATIVE OF UNIT TRAINING REQUIREMENTS

The TAC and SAC annual flying hour program budget requests are centrally prepared at Command headquarters. TAC's budget request for flying hours is based on aircraft utilization rates rather than on a compilation of flying hours needed to meet

training requirements. SAC's budget request is based on standards that differ from how flying hours are used by the operating units.

In about 1980, the TAC commander developed a plan to increase TAC's flying hour program by progressively increasing aircraft utilization rates for the period 1980 through 1985. With the utilization rates specified, TAC uses a formula (the number of authorized aircraft times the predetermined aircraft monthly utilization rates times the average sortie duration rate times 12 months) to calculate the annual flying hours requested.

TAC establishes its flying hour program in accordance with Air Force Regulation 27-7, which states that "Recommended flying hours must be based on mission requirements or capability, whichever is lower." DOD says sortie generation capability is lower than TAC's GCC level C training requirements, and therefore TAC flying hour programs are based on aircraft utilization rates.

As shown in appendix IV, the total annual flying hours for TAC fighter wings has increased by 120,000 flying hours, or 70 percent, from fiscal year 1980 through 1986. With a 70-percent increase in total flying hours, TAC's total training requirements goal of GCC level C still remains elusive. In 1987, DOD is requesting an additional one-half hour per tactical aircrew per month and stresses its importance because the budget hours will still be short of the number required to complete essential training. A budget/requirements determination process should provide the Congress with oversight on how flying hours will be used and what combat capability is lacking because sortie generation capability is less than that needed to meet full training requirements.

Since 1980, the additional flying hours were generated by adding aircraft to the inventory and by increasing the rate at which all aircraft are flown. For example, about 210 aircraft of various types were added to the inventory, and the average number of times an aircraft was required to be flown per month increased from 16.6 to 20.6. Air Force officials said the additional hours were used to provide individual pilots with more flying hours and to train more pilots as the aircraft inventory grew and the pilot/aircraft ratio increased. Also, according to a former TAC commander, TAC encouraged increased flying by wing staff officers during this period.

Records were not available, at the time of our review, to determine how the flying hour increases were distributed. Subsequent data provided by DOD shows that, of the total increase in flying hours for operational fighters from 1980 to

1986, 50 percent was due to force structure increases, 1.2 percent to pilot-to-aircraft crew ratio changes, 34.8 percent to increased hours per individual line pilots, and 14 percent to increased flying by supervisory personnel.

SAC's annual B-52 flying hour program budget request is based on the number of authorized aircrews times an average of nine sorties per quarter times a 9-hour sortie duration rate times four quarters. SAC Headquarters calculates its budget request using an average sortie duration of 9 hours when the actual sortie duration is 7.8 hours, a total difference of about 12,500 fewer hours than those projected in the budget request. In addition, SAC calculates its flying hour program requirements based on the assumption that crews fly 12 months of the year, but because of sickness, travel, training courses, and leave, crews fly less than 12 months each year. At the 97th Bombardment Wing, for example, 16 pilots had a combined requirement of 196 sorties, 25 fewer sorties than the 221 sorties initially requested during the last half of 1985.

SAC also overprograms its budget requirements for staff training. For example, the 97th Bombardment Wing only used 176 hours of 697 hours allocated for that purpose. The remaining 521 hours were used to train combat crews and instructors and/or staff on the same sorties. Also, pilot upgrade and requalification training was provided by instructor pilots concurrent with crew training.

SOME PILOTS AND CREWMEMBERS EXCEED TOTAL FLYING REQUIREMENTS

Some TAC fighter pilots and SAC B-52 crews fly more hours than their total programmed training requires. They are instructor pilots, crews practicing for competitions with other units, or crews doing extra air refuelings. This results in flying that may not be directed to achieving maximum training benefits for the unit's pilots as a whole.

At the 1st Tactical Fighter Wing, we compared the average number of sorties pilots flew during the first half of 1985 with the mission-ready requirements. Records showed that nine of the 21 instructor pilots flew more than 103 sorties which exceeded GCC level C, TAC's training goal. One pilot flew 155 sorties, which is 52 sorties above TAC's training goal.

At SAC's 97th Bombardment Wing, records showed that of the 17 pilots commanding crews in the last half of fiscal year 1985, 9 pilots flew 32 sorties more than the number necessary to satisfy their total training requirement. The 32 additional sorties required about 260 flying hours, costing about $2.3

million. Nineteen of the 32 sorties were flown by two crews the unit had selected as its best crews to represent the unit in SAC's annual bomb competition.

Appendix V shows the air refueling frequencies SAC and TAC crews need to maintain mission-ready status. B-52 pilots at the 97th Bombardment Wing were accomplishing more air refuelings than were required by SAC regulations to meet training requirements. Providing such training beyond the 24 yearly air refueling exercises required for each pilot increases B-52 flying hours as well as KC-135 tanker flying hours. In fiscal year 1985, these air refuelings by the 97th Bombardment Wing cost about $1.2 million.

CONCLUSIONS

Military judgments will always play a significant role in determining combat readiness and pilot proficiency. However, we believe that objective data should be used, to the extent feasible, to support and substantiate military judgment. We agree that benefits most likely accrue from each additional hour that a pilot flies. However, considering the high cost of flying, the questions to be addressed include:

--Are the benefits sufficient to justify the cost?

--Do other options exist for improving pilot proficiency that might be more cost effective?

We do not question the need for the Air Force's operational units to be fully combat ready. We believe proper analysis of trade-offs among the factors that impact pilot proficiency should not be based on judgment alone but should include some objective measurement of the impact of various factors on pilot proficiency. For example, some TAC ranges have the capability to score air-to-ground gunnery and bombing qualification runs while another range is equipped to score air-to-air encounters. We believe the array and analysis of this type of quantifiable data would be useful in evaluating the impact of changes in flying hours, equipment, and tactics on pilot proficiency.

We also believe that Air Force and congressional oversight of TAC and SAC's annual flying hour budget requests would be enhanced if they presented field unit flying hour program needs based on field unit training requirements. These training requirements should be an integral part of the budget development process so that decisionmakers can be made aware of anticipated shortfalls in training and the potential effect this may have on the Air Force's combat capability.

We believe that, as the Congress and the Air Force assess flying hour programs, a management issue which should be addressed is the need and ability to develop, maintain, and link objective data, such as training range results, so as to assess

--the benefits a pilot/aircrew receives from different levels of flying, and

--the relative benefits of additional flying hours versus other options, such as equipment mix and tactics, which impact proficiency.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our overall objective was to determine how TAC and SAC manage their flying hour programs, with particular emphasis on how they budget and use flying hours for continuation training of pilots and crews in active units. Our specific objectives were to

--ascertain how TAC and SAC determine their annual flying hour training requirements and

--describe how TAC and SAC measure and report pilot/aircrew proficiency.

We conducted our review from July 1985 to January 1986 at Air Force Headquarters, Washington, D.C.; TAC Headquarters and the 1st Tactical Fighter Wing, Langley Air Force Base, Virginia; SAC Headquarters, Omaha, Nebraska; and the 97th Bombardment Wing, Blytheville AFB, Arkansas. Because the DOD Inspector General issued a March 1985 report on SAC's KC-135 flying hour program, we limited our review at SAC to its B-52 flying hour program.

At each location, we interviewed agency officials and obtained and analyzed pertinent regulations and documents such as Tactical Air Force Manual 51-50, which specifies the sorties required for each GCC level, and SAC Regulation 51-52, which specifies individual and crew requirements for B-52 continuation training. We also analyzed selected pilot and aircrew training data contained in the Air Force Operations Research Management System.

We did not assess the reliability of automated data systems by TAC and SAC or verify data provided by them. For example, the aircraft utilization rates, average sortie duration, actual versus budgeted flying hours, and average cost per flying hour were not verified. The figures used in this report were

provided by the Air Force or were computed by us using unverified data. Except as noted above, we made the review in accordance with generally accepted government auditing standards.

MILITARY READINESS DEFINITIONS AND CRITERIA UNDER JOINT CHIEFS OF STAFF'S UNIT STATUS AND IDENTITY REPORT (UNITREP) SYSTEM

UNITREP reports on the readiness of combat, combat support, and service-selected combat service support units (both active and reserve). These units report in terms of combat readiness ratings (C-ratings), which attempt to measure a unit's ability to perform wartime tasks by assessing the peacetime availability and status of resources possessed or controlled by the unit or its parent unit in four resource areas. These are (1) equipment and supplies on hand, (2) equipment condition, (3) personnel, and (4) training. An overall C-rating is reported based on a composite of the individual unit's C-ratings in the four resource areas. The five C-rating categories, as defined in Air Force Regulation 55-15, are

--C-1, Fully Combat Ready. "A unit possesses its prescribed levels of wartime resources and is trained so that it is capable of performing the wartime mission for which it is organized, designed, or tasked."

--C-2, Substantially Combat Ready. "A unit has only minor deficiencies in its prescribed levels of wartime resources or training that limit its capability to perform the wartime mission for which it is organized, designed, or tasked."

--C-3, Marginally Combat Ready. "A unit has major deficiencies in prescribed wartime resources or training that limit its capability to perform the wartime mission for which it is organized, designed, or tasked."

--C-4, Not Combat Ready. "A unit has major deficiencies in prescribed wartime resources or training and cannot effectively perform the wartime mission for which it is organized, designed, or tasked."

--C-5, Service Programmed, Not Combat Ready. "A unit that, due to Service programs, does not possess the prescribed wartime resources or cannot perform the wartime mission for which it is organized, designed, or tasked. (For example, ships in overhaul and units undergoing major equipment conversion/transition fit into this category.)

ESTIMATED SAC FLYING REQUIREMENTS

Table III.1: Estimate of Flying Hours Required for SAC Combat Crews for Total Proficiency Requirements

		Sorties				
Crews	Number of crews	Total requirements for 3 months	Total for 3 months	Total for year	Ave. sortie duration hours	Flying hours
Ready	154	10	1,540	6,160	7.8	48,048
Senior	85	9	765	3,060	7.8	23,868
Select	51	8	408	1,632	7.8	12,730
Total	290		2,713	10,852	7.8	84,646

Table III.2: Estimate of Flying Hours Required for SAC Combat Crews for Readiness Requirements[a]

		Sorties				
Crews	Number of crews	Readiness requirements for 3 months	Total for 3 months	Total for year	Ave. sortie duration hours	Flying hours
Ready	154	7	1,078	4,312	7.8	33,634
Senior	85	6	510	2,040	7.8	15,912
Select	51	5	255	1,020	7.8	7,956
Total	290		1,843	7,372	7.8	57,502[a]

[a]This was based on SAC's nuclear mission. SAC had an additional contingency mission that required an additional 1,392 flying hours in fiscal year 1985.

DISTRIBUTION OF TAC'S ANNUAL FLYING HOURS FOR FISCAL YEARS 1980 THROUGH 1986

Between 1980 and 1986, the TAC flying hour program increased from about 605,000 to 738,000 hours, an increase of 133,000 hours (22 percent). About 120,000 of the additional hours went to the tactical fighter wing units--those units with a combat mission. Flying hours in those units increased about 70 percent over the fiscal year 1980 total.

Table IV.1: TAC Flying Hour Increases From Fiscal Years 1980 Through 1986

Fiscal year	TAC flying hours all units	Tactical Fighter Wings
1980	605,167	171,889
1981	636,643	182,873
1982	686,500	224,335
1983	706,615	256,237
1984	717,905	285,955
1985	724,041	282,821
1986 (programmed)	737,923	292,087

With the increases shown above, TAC increased the average number of sorties per pilot by 1.8 sorties per month and average flying hours per pilot by about 2.2 hours per month, as shown in table IV.2. This is a 16-percent increase in average sorties and a 13-percent increase in hours per pilot over the 6-year period.

Table IV.2: Average Sorties and Hours per Pilot/Month

Fiscal year	Sorties	Hours
1980	11.4	16.3
1981	11.2	15.8
1982	11.8	17.1
1983	12.5	17.5
1984	13.1	18.3
1985	13.1[a]	18.3
1986 (programmed)	13.2	18.5

[a]Estimate, actual data not available.

PILOT AIR REFUELING PROFICIENCY REQUIREMENT TO BE MISSION READY

Command	Type aircraft	Frequency
Tactical Air Command	A-10	3/180 days
	F-4	3/180 days
	F-15	3/180 days
	F-16	3/180 days
	F-111	3/180 days
Strategic Air Command	B-52	4/90 daysa
	KC-135 tanker	3/90 days

aSAC has tentatively increased the requirement to 6 per 90 days or 24 per year.

APPENDIX VI

COMMENTS FROM THE ASSISTANT SECRETARY OF DEFENSE FOR FORCE MANAGEMENT AND PERSONNEL

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-4000

16 JUL 1986

FORCE MANAGEMENT AND PERSONNEL

Mr. Frank C. Conahan
Director
National Security and International Affairs Division
US General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the GAO draft report, "Tactical Air Command and Strategic Air Command Flying Hour Programs," transmitted by your letter of June 4, 1986 (GAO Codes 392119 and 392169/OSD Case 7027).

The DoD does not concur with the GAO draft report. Throughout the report there is the implication that the Air Force is flying more hours for training than are required to achieve a state of full combat capability. This is not correct. In fact, the flying hour program provides these two commands fewer hours than are required to achieve full combat capability for all of their assigned missions.

It is necessary to recognize that the readiness criteria in the Unit Status and Identity Report (UNITREP), as applied to Air Force flying units, represent only minimum standards. A rating of C-1, therefore, indicates only that the unit has met the minimum requirements for undertaking its primary mission. Additional training, beyond this level, is required for two purposes: first, to gain a higher state of performance in the unit's primary mission and thus a higher assurance of success and survival in combat (i. e., minimum attrition rate); and, second, to achieve proficiency in specialized taskings and assigned secondary missions. The systems used by the Tactical Air Command and Strategic Air Command to develop their training programs (from which their flying hour requirements are derived) provide for this required training. It is not correct, as is implied in the GAO draft report, that flying hours beyond those required to reach the C-1 threshold are excess to requirements and, therefore, are not justified.

An excellent example of the necessity for this additional training is the recent bombing of terrorist strongholds in Libya by F-111s. This complex mission required skills and proficiencies far in excess of the threshold levels for UNITREP C-1 (or Graduated Combat Capability Level A). A flying hour program based on carefully developed training requirements and the experience and knowledge of command-level pilots is the price that must be paid for this kind of assured capability.

APPENDIX VI

Detailed DoD comments on the findings in the draft report are contained in the enclosure. Additional factual issues have been annotated in a copy of the draft report and provided to the GAO.

The Department appreciates the opportunity to comment on this important report.

Sincerely,

David J. Armor
Acting

Enclosure

APPENDIX VI

GAO DRAFT REPORT - DATED JUNE 4, 1986
GAO CODES 392119 and 392169) OSD CASE 7027

"TACTICAL AIR COMMAND'S AND STRATEGIC AIR COMMAND'S FLYING HOUR PROGRAM"

DEPARTMENT OF DEFENSE COMMENTS

*****

FINDINGS

FINDING A: Flying Hour Programs. The GAO reported that the Tactical Air Command (TAC) and the Strategic Air Command (SAC) establish continuation training requirements for the flying needed to bring pilots and other crew members to a fully combat ready status and the additional flying to further enhance proficiency. The GAO further reported that DoD measures readiness at the unit level through the Joint Chiefs of Staff Unit Status and Identity Report (UNITREP) System. According to the GAO, flying hour requirements represent the hours crews must fly to complete training standards and attain a specific state of readiness--i.e., minimum standards have been established in terms of flying hours per crew, over a specific period of time, in order to maintain individual and unit level technical and tactical proficiency. The GAO observed, however, that although intended to gauge the amount of flight training accomplished, in practice, flying hours are more a measure of a level of activity. (p. 1, Letter; p.5, Appendix I/GAO Draft Report)

Now on pp. 1 and 5.

DoD COMMENTS: Nonconcur. The Tactical Air Command and the Strategic Air Command have established training programs to bring aircrew members to full combat ready status. This status is significantly higher than that required to report C-1 for UNITREP purposes.

Within TAC, UNITREP C-1 corresponds to a graduated combat capability (GCC) level of A, which is the minimum training level for a pilot to perform his unit's primary tasking. This differs from full combat capability in all taskings (GCC level C), which is the TAC requirement. SAC has a similar training program. Again, UNITREP C-1 only equates to combat capability in the primary tasking, while the SAC goal for full combat readiness is significantly higher. Although flying hours are a raw measurement of a level of activity, SAC and TAC training programs are not built on flying hours alone. Wartime missions (sorties) can be defined as a series of events that must be accomplished successfully to ensure mission success with minimum attrition. Training programs are designed to build initial and continuing proficiency in these events, and to introduce new capabilities. As flying hour activity increases, aircrews have more opportunity to practice mission events and to gain new skills, thereby

enhancing readiness and closing the gap toward full combat capability.

FINDING B: Readiness/Training Requirements Are Subjective. The GAO reported that TAC and SAC define continuation training requirements in terms (1) of the number of sorties a pilot or aircrew must fly to qualify as fully combat ready and (2) the additional sorties needed to achieve maximum proficiency. The GAO found that readiness criteria and training requirements at TAC and SAC do not have specific studies or empirical data to support either the sorties flying hours required for enhanced proficiency. The GAO concluded that, despite a time of increasing fiscal constraints with its additional emphasis on the cost-effectiveness of increments of Government spending, objective data required for analysis of the Air Force continuation training program do not exist. While not questioning the need for the Air Force operational units to be fully combat ready, the GAO questioned the wide variance between the fully combat ready requirements and the total training goals TAC and SAC have established for proficiency. The GAO further concluded that proper analysis and trade-offs among the options that impact pilot proficiency should not be based on judgment alone, but should include some objective measure of the impact of factors on pilot proficiency. (p.1, Letter; pp. 6-7, pp.14-15, Appendix I/GAO Draft Report).

Now on pp. 1, 5-7.

DoD COMMENTS: Nonconcur. Training requirements for TAC and SAC pilots are continuously refined by commanders, evaluation teams, and staff officers who are experts in aircrew training. These experienced individuals employ such objective data as trend analysis (data for which is collected by both local and command evaluation teams), safety data collected by elements of the Air Force Inspector General's office and the results of training requirements determination from local and command level training offices. Additional empirical data, which are becoming available in ongoing Air Force and Navy studies, validate the judgment of these experts. Because of a basic misconception on the part of the GAO about the definitions of fully combat ready (C-1) for UNITREP and TAC/SAC training requirements (which reflect higher numbers of sorties and events), the report implies a wide variance exists between these two elements. In fact, no variance exists. The criteria to report UNITREP C-1 in both commands is 85% of aircrews available and trained in the unit primary mission. For SAC crews, this is the Emergency War Order. For TAC it may be air-to-ground conventional tasking, nuclear strike, or air defense. The salient point is, UNITREP C-1 does not reflect increased proficiency and performance of the primary mission (i.e., minimum attrition) or full capability in additional taskings.

Command training requirements are based upon achieving full combat capability in all assigned tasks. A fully combat capable F-16 pilot, for example, would not only be trained in his units' primary task (i.e., conventional air-to-ground), but would also

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be trained in nuclear strike and air defense. There is an absolute requirement for this training--a capability in all missions which the pilot/aircraft may be tasked to perform. The end result is a force with the capability and flexibility to defeat the threat and win the battle.

As stated above, there are many objective factors which are taken into consideration by the experienced and capable commanders who are responsible for making inputs to the development of the flying hour program in each command. These factors include evaluation results and trend analysis, safety of flight considerations and records, as well as inputs from instructional system development personnel and tactics developers. These are intrinsic considerations as the flying hour program is developed each year.

FINDING C: Flying Levels Exceed Readiness Requirements. The GAO found that TAC fighter pilots and SAC B-52 aircrews are flying considerably more sorties/hours than are required to qualify as mission ready. The GAO estimated that in FY 1985, TAC operational units flew about 87,000 hours above mission ready levels at a cost of about $296 million. The GAO further estimated that the SAC B-52 aircrews could have flown about 25,700 hours above requirements, costing about $223 million. The GAO observed that both TAC and SAC training requirements also specify sorties/flying hours above the mission ready level. The GAO found, however, that TAC and SAC officials say they cannot quantifiably measure the effect additional flying has on pilot/aircrew proficiency, although they believe that pilots' proficiency increases as flying hours increase. Observing that while TAC pilots are considered much more proficient today than they were in 1980 (indicators cited are a declining accident rate and better bombing scores), the GAO concluded that factors other than flying hours have contributed to increased pilot/aircrew proficiency since 1980, including (1) more rigorous and realistic combat training, (2) newer and safer aircraft with improved capabilities, (3) reduced maintenance requirements and (4) increased spares inventory. The GAO pointed out that data concerning the relative impact each factor has on pilot proficiency are not available, nor does the Air Force have the criteria or data to assess the relative impact of additional flying hours and these other factors on pilot proficiency. The GAO, therefore, further concluded that the Air Force cannot identify the most cost-effective mix. The GAO finally concluded one issue that should be assessed is the need to establish a data base that will permit a better measure of what benefit a pilot/aircrew receives from different levels of flying, as well as an assessment of the relative benefits of additional flying hours versus other options that impact pilot proficiency. (p. 2, Letter; pp. 7-11, p. 16, Appendix I/GAO Draft Report)

Now on pp. 1, 7-8.

DoD COMMENTS: Nonconcur. TAC/SAC aircrews are not flying more sorties/hours than are required to qualify them and maintain their proficiency in all assigned tasks. While TAC/SAC aircrews

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are flying more sorties/hours than are required to qualify them as mission ready for UNITREP purposes, the important distinction is that performing at the C-1 level qualifies aircrews only in the unit primary task, and qualification at this level is used only for UNITREP reporting purposes. It differs significantly from full combat capability in the broad spectrum of taskings and capabilities. The reason SAC and TAC aircrews train above the basic mission ready standard is to increase the odds of success in combat by increasing proficiency and thus reducing attrition. This includes training in additional taskings and acquisition some special capabilities (i.e., proficiency and use of special systems such as Maverick, Pave Tack, or Harpoon).

Results of recent studies show that at current flying activity rates, the Air Force has not reached the point of maximum return for pilot proficiency.

It is true that factors other than flying hours have contributed to increased pilot proficiency; however, these other factors require and/or support increases in flying hour programs to make them effective. More realistic and rigorous combat training requires flying time for preparation. Without an adequate training foundation for demanding, realistic, combat training scenarios such as Red Flag, pilots would not be able to take full advantage of this type of training, and accident rates would be unacceptable. As we acquire newer and safer aircraft, these aircraft also have better and more sophisticated capabilities. Aircrews must be trained to fully exploit those capabilities--with better training programs, including increased flying hours. Reduced maintenance requirements and increased spares inventories have an impact on aircrew proficiency only in that these items provide support for the additional flying hours required to ensure full combat capability. With respect to establishing the most cost effective mix of training requirements, training requirements as reflected in flying hours, range improvements, etc, are not developed as a function of the budget process. Rather, these elements of the training environment are developed to meet the total training requirements to meet the known threat. Subsequently, during the budget process, priorities among these elements of training requirements are decided; but this process is, and should remain, separate from requirements development.

FINDING D: Budget Process Not Totally Representative Of Unit Training Requirements. The GAO found that the TAC budget request for flying hours is based on aircraft utilization rates rather than on completion of flying hours needed to meet training requirements. On the other hand, the GAO found that the SAC budget request is based on standards that differ from how the flying hour program is executed at the wing level. The GAO also noted that the Air Force management policy is all units fly all the hours they are allocated. The GAO reported that the total annual flying hours for TAC fighter wings has increased by 120,000 hours, or 70 percent, from FY 1980 through FY 1986.

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According to the GAO, these additional flying hours were generated by adding aircraft to the inventory and by increasing the rate at which all aircraft are flown. The GAO reported that Air Force officials said the additional hours were used to provide individual pilots with more flying hours and to train more pilots as the inventory grew and the pilot/aircraft ratio was increased. The GAO observed, however, that records were not available to determine how the flying hour increases were distributed among the factors. The GAO also found that some SAC B-52 crews fly more hours and sorties than their programmed requirement. The GAO explained that this happens in part because SAC Headquarters calculates its budget request using average sortie durations of 9 hours, when the actual sortie duration is 7.8 hours, a total difference about 12,500 fewer hours than the budget request. In addition, the GAO noted that SAC calculates it's flying hour program requirements based on crews flying 12 month of the year, without taking into consideration sickness, travel, training courses, and leave. The GAO concluded that (1) the TAC and SAC Headquarters centrally prepared annual flying hour program budget requests do not totally represent field unit training requirements and (2) the TAC and SAC flying hour requests would be enhanced if they presented unit flying hour program needs based on field unit training requirements. The GAO further concluded that in this time of increasing fiscal restraints, and particularly in light of the Balanced Budget and Deficit Control Act of 1985, there is a need to focus greater attention on the justification of the TAC and SAC flying hour programs, and particularly on the question of how much flying is needed for pilot and crew to reach a sufficient level of proficiency. In addition, the GAO concluded that program economies could be realized if TAC and SAC revised their management policy of flying every hour that is authorized. (p. 2, Letter; pp. 11-12, p. 15, p.16, Appendix I)

Now on pp. 2, 8-10.

DoD COMMENTS: Nonconcur. The TAC establishes the flying hour program in accordance with AFR 27-7 para 2 U. d. (8) which states that the lower of training requirements or sortie generation capability will be the determinant factor. Currently the lower of these two is sortie generation capability. Consequently, TAC flying hour programs are based on aircraft utilization rates that reflect the programmed limit of sortie production capability. The SAC also establishes flying hours in accordance with AFR 27-7 to the lower of requirements or capability. The GAO survey only looked at one bomb wing, one of only two with a single designed operational capability (DOC). Compared to any of the other fourteen of sixteen SAC bomb wings, Blytheville has a very limited mission. The other wings have such additional taskings as mine laying, sea surveillance, and conventional delivery. Nonconsideration of these additional taskings apparently led GAO to the erroneous conclusion that SAC's budget requests were based on standards that differed from how the flying hour program was executed at wing level. In fact, multiple DOC training requirements for the remaining SAC wings

exceed sortie producing capability, and the SAC, like the TAC, programs to the limits of capability.

The DoD does not understand why the GAO would question the practice of using all of the flying hours available, given that total training goals cannot be reached at current funding levels. Under these circumstances, it is both prudent and appropriate for all units to fly all the hours they are allocated to maximize the use of a limited resource.

The DoD can, in fact, show how increased flying hours were used. Flying hours in operational fighters grew approximately 67.6% from 1980 to 1986. During that period the operational fighter force structure grew 33%. Of the total 116,255 hours of growth, 50% was due to force structure increase with directly related pilot force growth, 1.2% was due to increased pilot-to-aircraft crew ratio, 34.8% was due to increased hours per individual line pilots, and 14.0% was attributable to increased flying by supervisory personnel.

The misperception concerning the difference between requirements to meet UNITREP C-1, and those required for an aircrew to be proficient in all of the unit's assigned taskings continues to be a significant issue in this report. Understanding of the requirement to be proficient in all of a unit's assigned taskings and the capability which that gives the DoD is basic to understanding the development of the flying hour program.

Both the SAC and the TAC use total field unit training requirements as the flying hour program foundation. As flying hour requests are developed, however, the fiscally restricted sortie production capability becomes the determining factor for final program levels. Misinterpretation of this fact by the GAO has caused it to incorrectly state that field unit training requirements are not considered. Again, this illustrates the difference between the required flight training program and the best available program under the available funding.

FINDING E: Some Pilots And Crews Exceed Total Flying Requirements. The GAO found that some TAC fighter pilots and SAC B-52 crews fly at a level beyond their total programmed training. According to the GAO, these are instructor pilots, crews practicing for competitions with other units, or crews doing extra air refueling. The GAO concluded that this results in flying that may not be directed to achieving maximum training benefits for the unit's pilots as a whole. The GAO cited, as an example, that B-52 pilots at the 97th Bombardment Wing (BMW) were accomplishing more air refueling than required by SAC regulations to meet training requirements. The GAO noted that providing such training in excess of the 24 yearly air refueling exercises required for each pilot increased B-52 flying hours as well as the KC-135 tanker flying hours. The GAO calculated that in FY 1985, the excess air refuelings by the 97th BMW cost more than

Now on pp. 10 and 11.

$1.2 million. The GAO concluded that a budget/requirements determination process be instituted that clearly shows how flying hours in excess of those needed to maintain a C-1 readiness rating will be used. (p.2, Letter; pp.13-14, p. 16, Appendix 1)

DoD COMMENTS: Nonconcur. This finding provides a misleading picture of the unit training environment. While some SAC and TAC aircrews do, on occasion, fly at a level beyond their total individual programmed training requirements, this flying is in support of the unit training program and is necessary for upgrading the unit's overall combat readiness. This is true, for example, in the case of instructor pilots who are a valuable resource. Their expertise is required to provide training to new, upgrading, or less experienced aircrews. Moreover, the sorties flown by instructors do not all count toward satisfying their own training requirements. Crews practicing for competitions do fly more than other crews in a one or two month period. Over the course of a six month training cycle, however,this apparent excess becomes evenly distributed. The important point in the competitive environment is that there are many benefits which accrue to the individual units as well as the command. Among these benefits are: better weapon delivery procedures, better and more accurate navigation procedures, better crew coordination procedures, and more effective defensive tactics. All of these benefits combined, when applied to the training program, provide more combat capable crews. While minimum air refueling requirements are specified to insure proficiency in this critical skill, air refuelings in the course of actual deployments or contingencies are not included within training documents. Obviously, the requirement to air refuel during a deployment cannot be eliminated because a pilot has already received his minimum number. Likewise, a pilot must be proficient prior to a deployment. Midway over the Atlantic Ocean is not the place to discover air refueling deficiencies, nor is it the place to begin questioning the capability of an F-111 crew to successfully defend their aircraft, find their target, deliver their weapons successfully and egress the hostile area with minimum attrition.

The CAO conclusion that a "budget/requirement determination process be instituted which clearly shows how flying hours in excess of those needed to maintain a C-1 readiness rating will be used" is not valid. The Air Force states requirements in terms of combat capability. For TAC, GCC level C, and for SAC, fully combat ready, are absolute requirements based on developing capabilities to meet the total threat. Budgetary considerations are concurrently being developed through a separate process. Only then are the budget and requirements meshed to see how much of the requirement can be fulfilled. UNITREP, as a follow-on measurement sytem, is designed as an internal management tool to show whether or not we can accomplish our primary tasking given resource constraints based on resources available (see enclosed SECDEF ltr, 25 Aug 1985, Subject: UNITREP).

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